

New York State Department of Transportation

PIA Red Flag NB23U4W023

By: Malav Shah

Flag Date: May 30, 2023

Superseding Information:

This flag supersedes: YF NB2222W011

Structure Information

BIN: 1065318

Feature Carried: 278I278IX2M23027

Feature Crossed: 6TH AVENUE

Orientation: 8 - NORTHWEST

Region: 11 - NEW YORK CITY

County: KINGS

Political Unit: City of NEW YORK

Approximate Year Built: 1962

Posted Load Matches Inventory : Yes

Bridge Load Posting (Tons) : Not Posted for Load

Primary Owner: New York State Department of Transportation

Primary Maintenance Responsibility: 12 - State - Subcontracted to another Party

Typical or Main Span Type: 3 - Steel, 02 - Stringer/Multi-Beam or Girder

This Bridge is not a Ramp

Number of Spans: 322

Verbal Notification Information

Person Notified: Muhammad Mubeen

Date: May 30, 2023 2:20:00 PM

Of: NYSDOT Region 11

Signature Information

Signature: Malav Shah, P.E. 106620-1

Date: June 08, 2023

Reviewed By: Robert Kemp

Date: June 08, 2023

Attachments: 10

Flagged Elements

Parent Element	Element	Total Quantity	Unit
Span Number : 231			
	107 - Steel Open Girder/Beam	989	ft
	PR831 - Steel Beam End	42	each

Flagged Condition Description

This PIA Red Flag No. NB23U4W023 is located at the same location as previously issued Yellow Flag No. NB2222W011.

Location: Span 231, Girder G19 at Pier 230.

Description:

The web of the Girder G19 is connected to the Pier Cap through a short connection angle on the right face and stiffener angle on the left face. The noted deficiencies are as follows:

- Short connection angle on the right face of the girder:

1. The connecton angle exhibits large corrosion holes in the top and bottom side of the connecting leg. The portion of steel between two holes is completely cracked, resulting in a complete disconnection of the connection angle to the Pier Cap (See Sketch Photo No.3 and Photo No. 7).

- Stiffener angle on the left face of the girder:

1. The connecting leg of the stiffener angle has a 1/2"H x full width hole in the upper side of the connecting leg, above the girder web.

2. The portion of the connecting leg near the heel of the angle, parallel to the girder web end vertical edge, has two holes
(i) 5-1/2"H x 1/2"W adjacent to the top corner of the girder web end, and
(ii) 2-1/2"H x 1/2"W hole with a 2"L fine crack adjacent to the bottom corner of the girder web end.
The portion between these two holes is completely cracked.

3. The connecting leg below the girder web is buckled out of plane and has a horizontal crack at the center of the height of the buckled area.

4. There is a large hole (approx. 5"H x full width) at the base of the connecting leg, above bottom flange of the pier cap of Pier 230, on the Span 231 side. (See Sketch Photo No.2 and Photo Nos. 8, 9, and 10).

During the inspection, vertical movement of the girder end was observed under cyclic live load from vehicles above the bridge.

Notes:

QC Note: This PIA Red Flag condition was discovered and verbally notified to the Region on 5/30/23 at 2:20pm with subsequent email notification shortly thereafter. The delay in the submission of the Draft Flag Report was due to internal (WSP) confusion related to the photos of the condition.

1.The affected member, Girder G19 is a load path redundant steel girder consisting of a web depth of 21.30" inches and thickness of 0.608 inches and is located under the deck in the roadway, approximately 12" off the edge of curb line/safety walk

2.The adjacent Girder (left) G18, is 5'-5" on center, has repair plates and is in fair condition,

3.The adjacent Stringer (right) S2, approximately 24" on center, acts as a support for the railing and curb above and receives no direct live loading. Stringer S2 in Span 231 at the connection to Pier 230 exhibits severe section loss in the web with a corrosion hole and in the connection angles and bottom flange, at the pier. Yellow Flag # NB23U4W018 is issued for this condition.

4. This location, Span 231, Girder G19 at Pier 230, was inspected during the 2022 SILO, with the following description as

per the Yellow Flag NB2222W011 report:

The right clip connection angle at Girder G19 connection to the pier cap at Pier 230 exhibits a 4-1/2" L x 1/4" wide vertical corrosion crack at the lower fillet (no change from the previous inspection). At the upper fillet, the clip connection angle has a 5" L x 1/8" wide vertical crack (new). The left side vertical stiffener connection angle has a 4" L x 4" H L-shaped corrosion hole at the base (no change) and a 3-1/2" H x 3/4" W (previously 3-1/4" H x 1/2" wide) corrosion hole at mid-section just below the G19 web. In addition, the upper section of the left side connection angle has a 6" H x 1/8" W vertical corrosion induced crack (new). The surrounding area of the 4" x 4" L-shaped corrosion hole at the base has up to 60% section loss.

5. A double lane closure on 3rd Avenue Eastbound with a 35' bucket truck is required to access the flagged location.

Flag Photographs

Photo Number: 1

Photo Filename: NB23U4W023_Location Plan.JPG

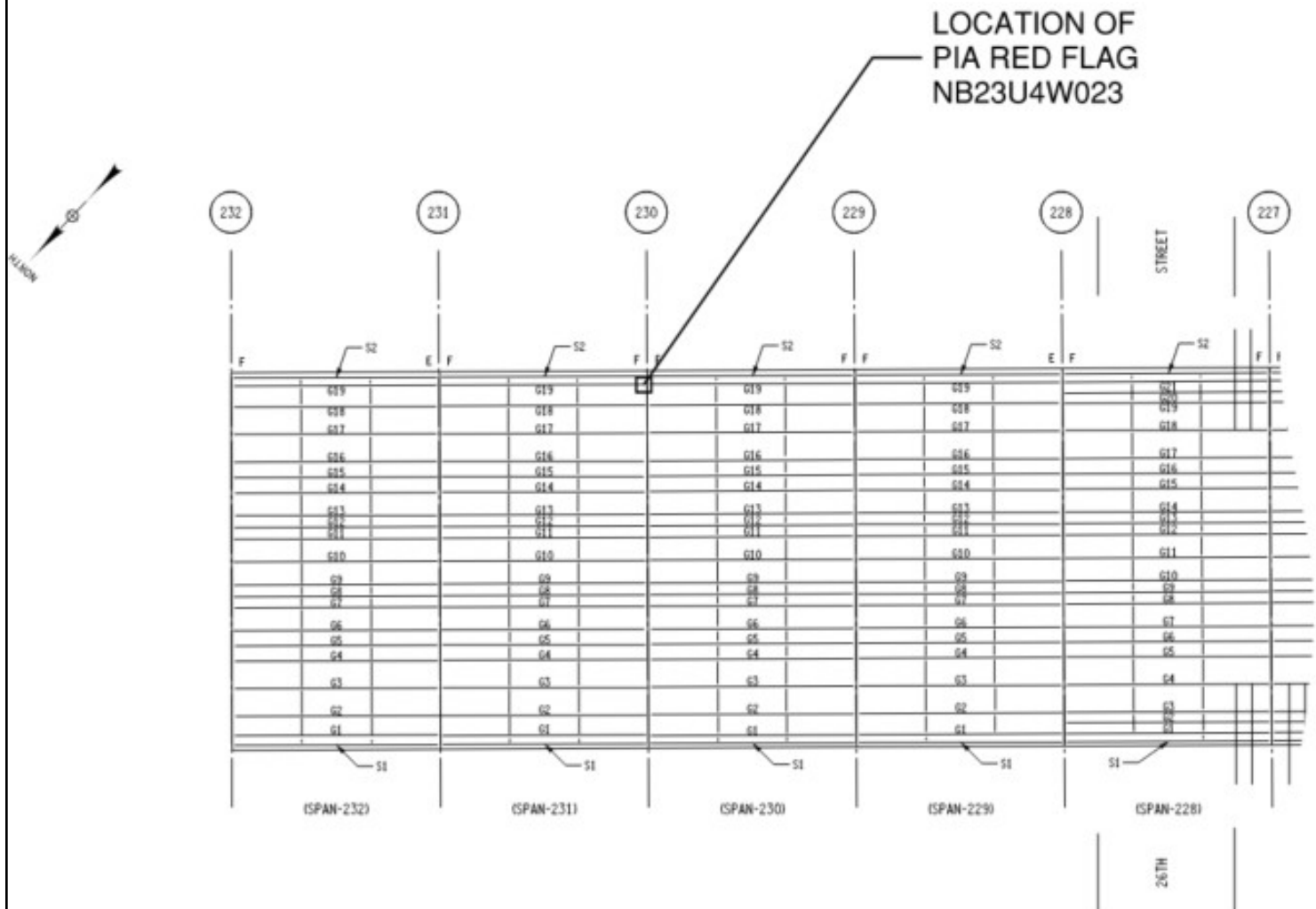
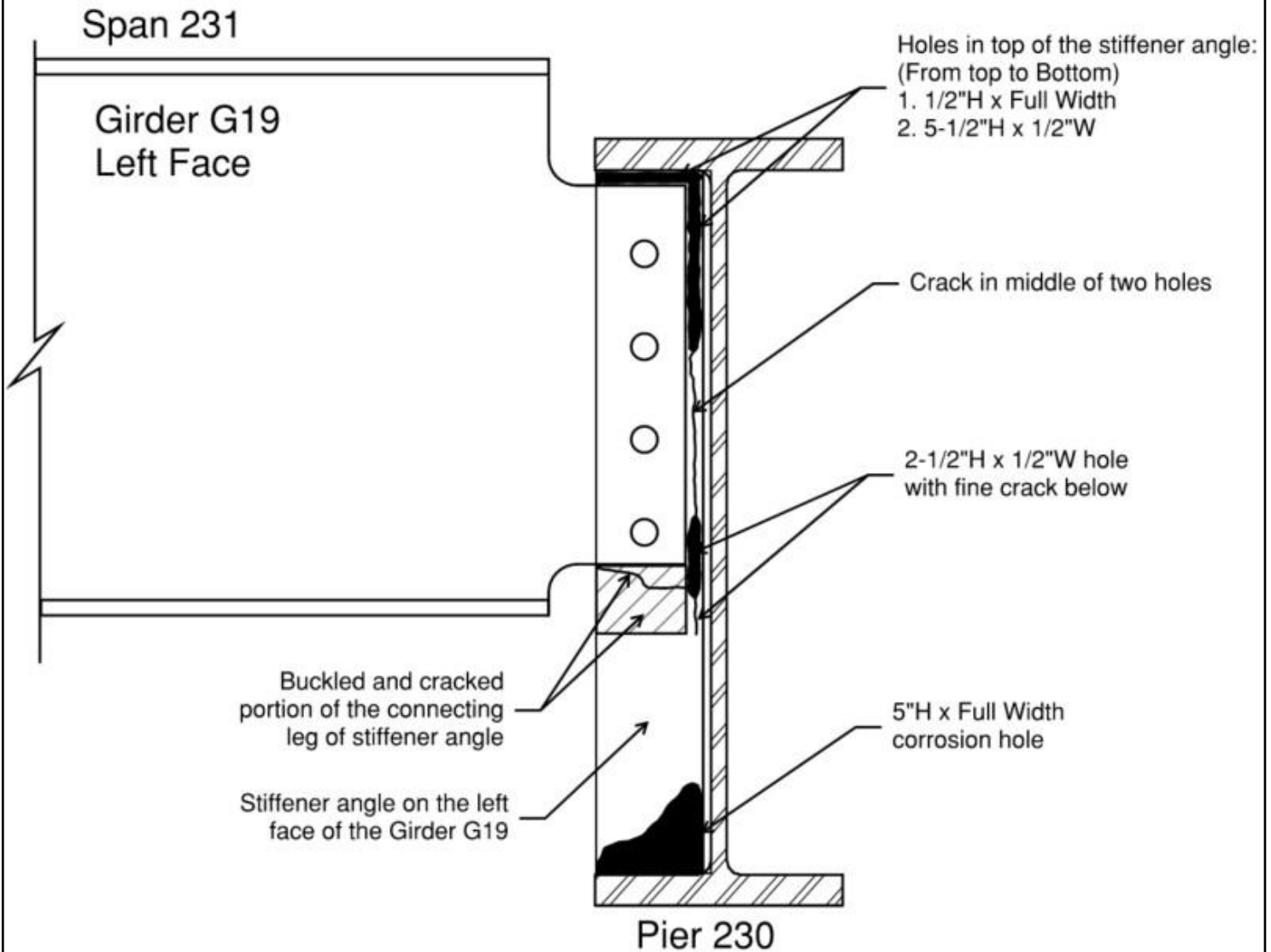
**Attachment Description: Flag Location Plan**

Photo Number: 2

Photo Filename: NB23U4W023_Condition Sketch 1.JPG

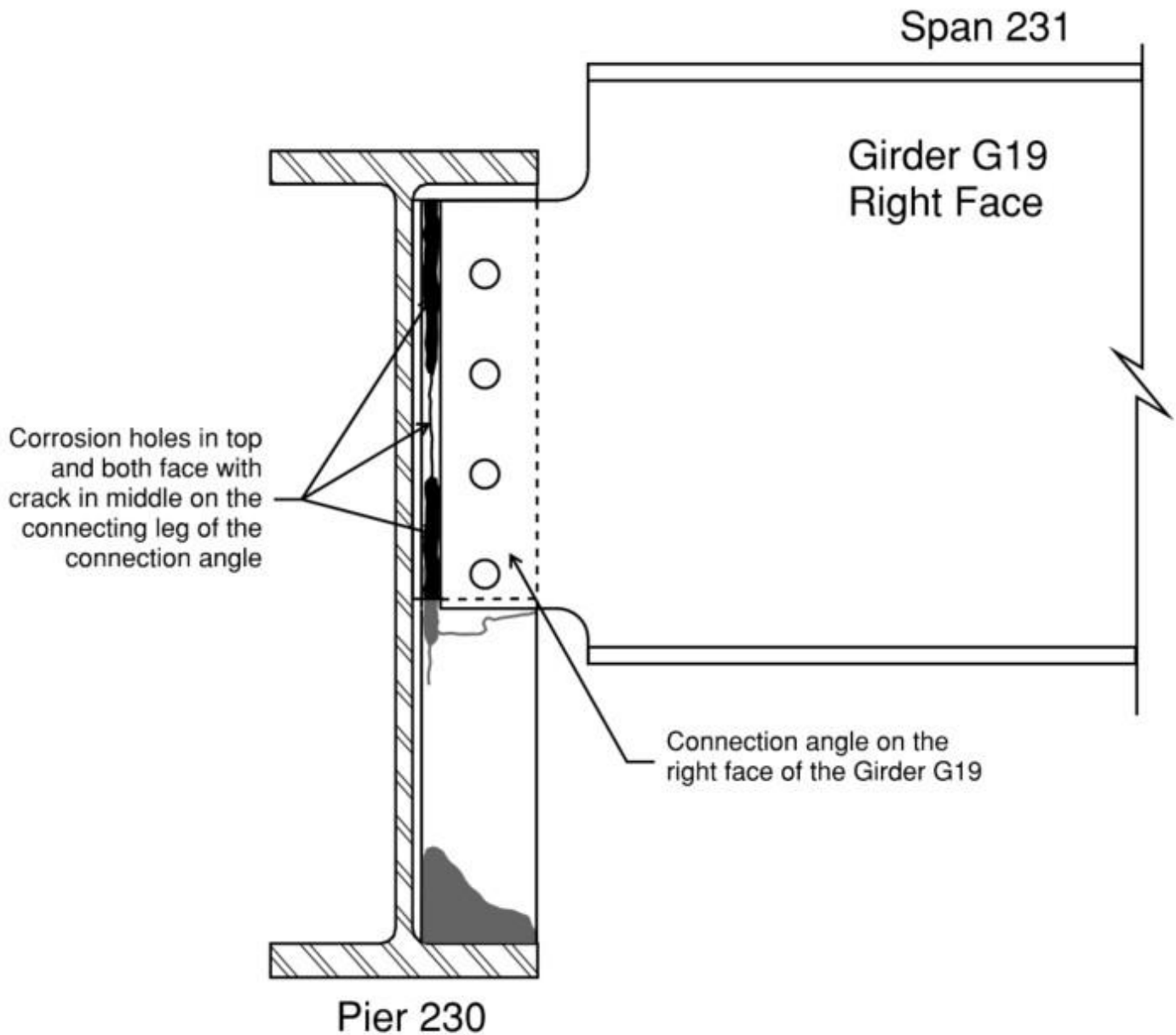


SKETCH FOR PIA RED FLAG # NB23U4W023
SPAN 231, GIRDER G19 AT PIER 230
(LOOKING RIGHT)
N.T.S

Attachment Description: Flag Condition Sketch 1

Photo Number: 3

Photo Filename: NB23U4W023_Condition Sketch 2.JPG



SKETCH FOR PIA RED FLAG # NB23U4W023
SPAN 231, GIRDER G19 AT PIER 230
(LOOKING LEFT)
N.T.S

Attachment Description: Flag Condition Sketch 2

Photo Number: 4

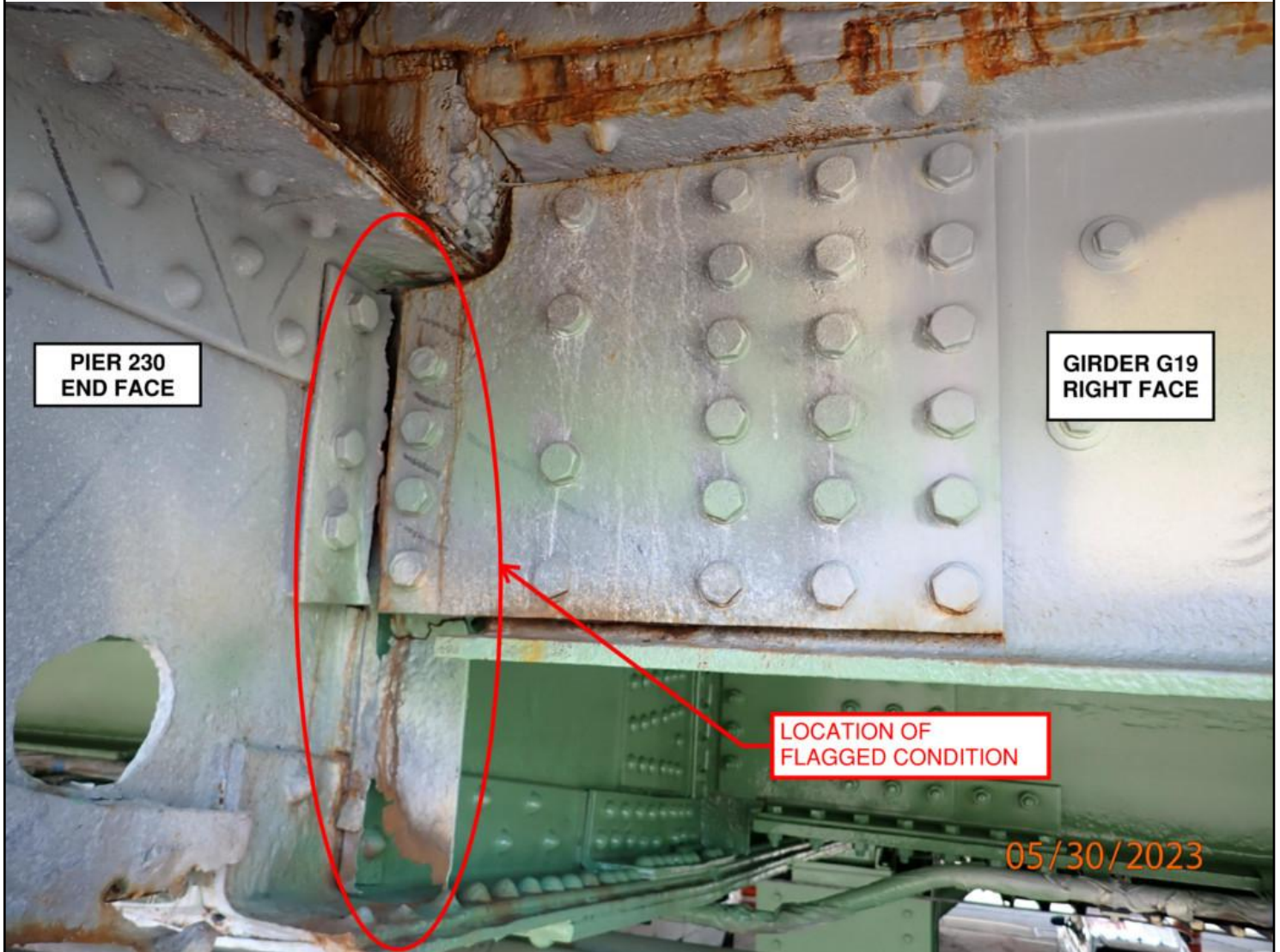
Photo Filename: P5303381.JPG



Attachment Description: General View of Flag Location. Looking Begin - Up.

Photo Number: 5

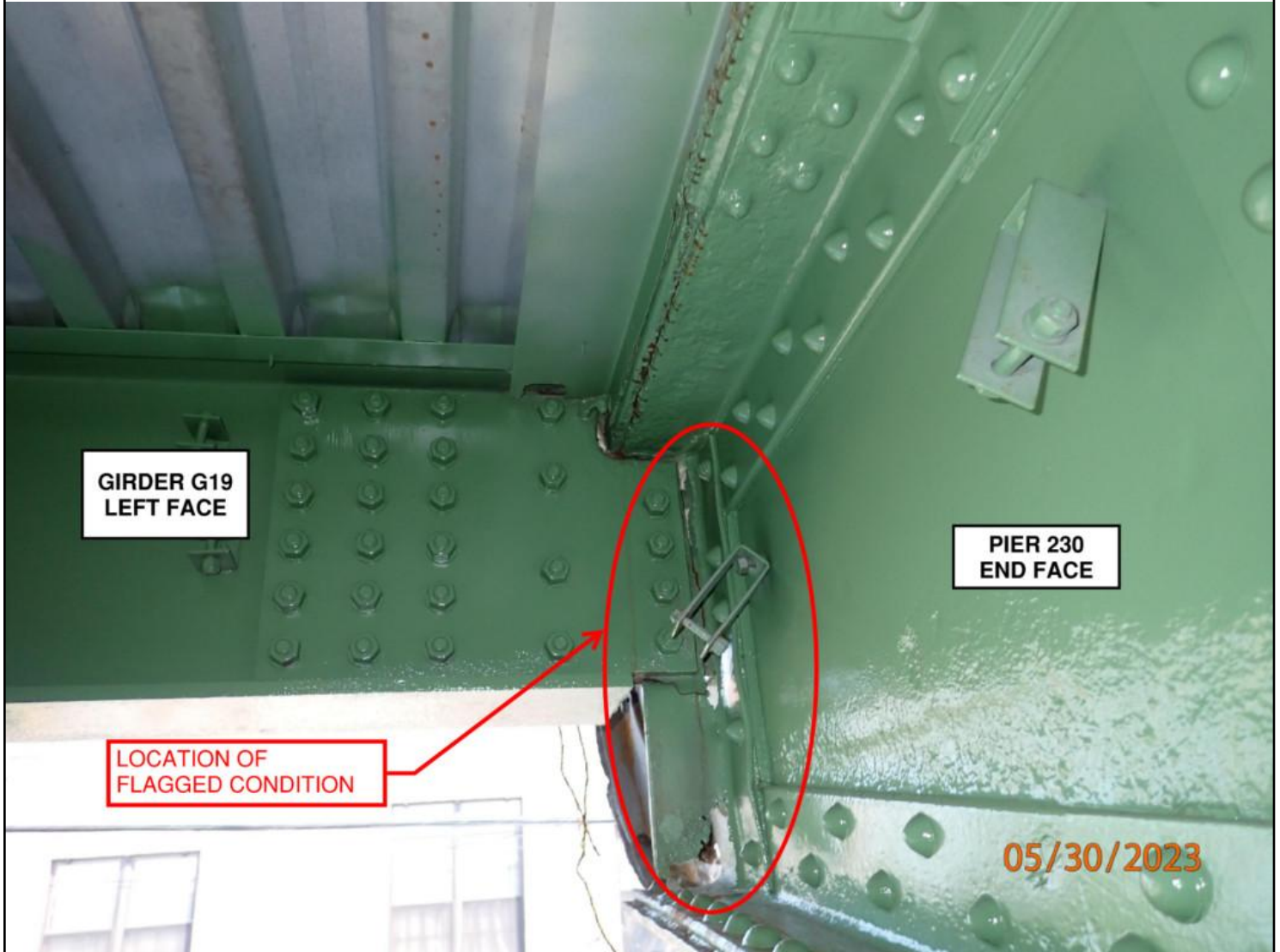
Photo Filename: P5303365.JPG



Attachment Description: General View of Girder G19 right face. Looking Begin-Left.

Photo Number: 6

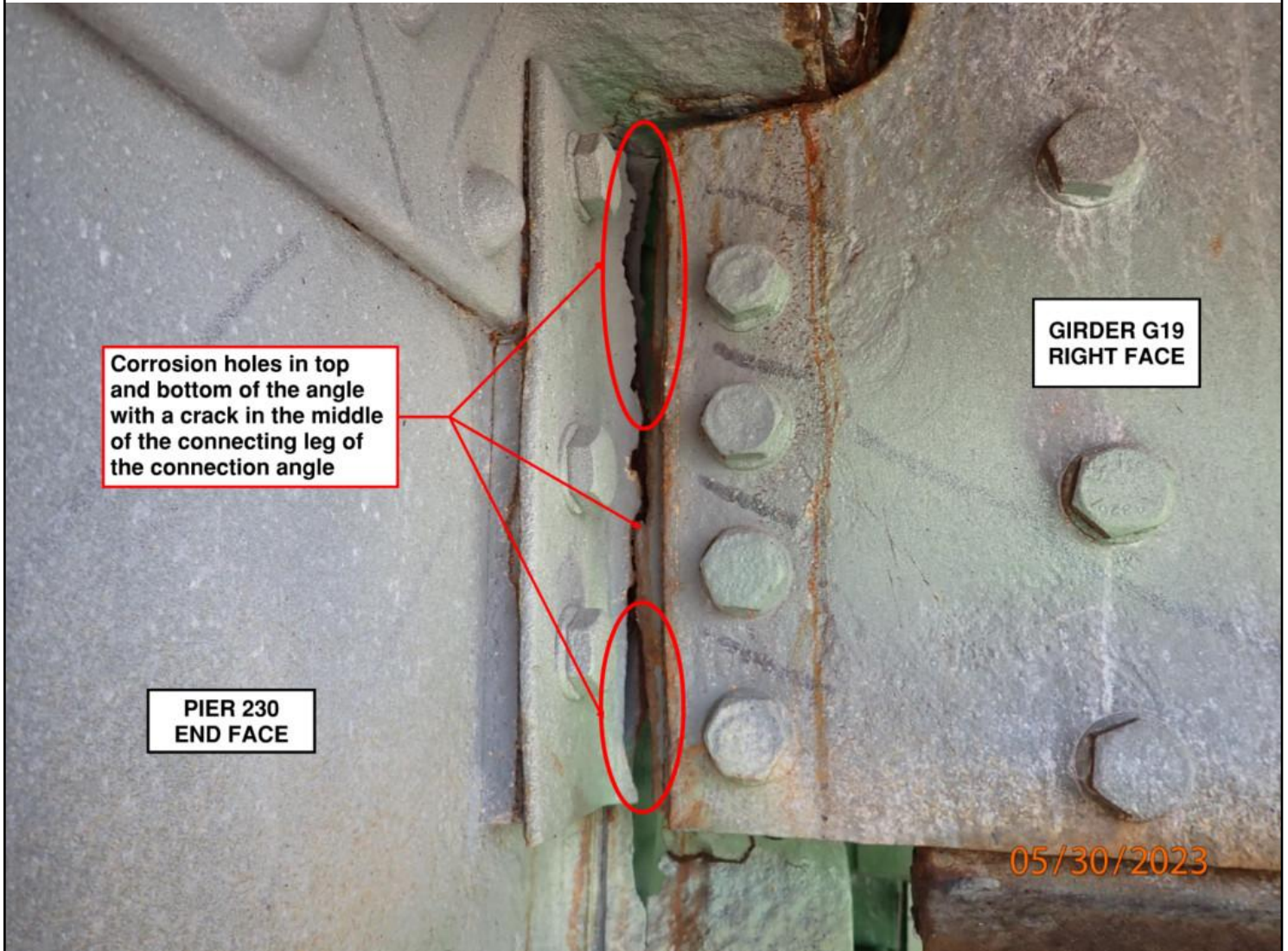
Photo Filename: P5303355.JPG



Attachment Description: General View of Girder G19 left face. Looking Right.

Photo Number: 7

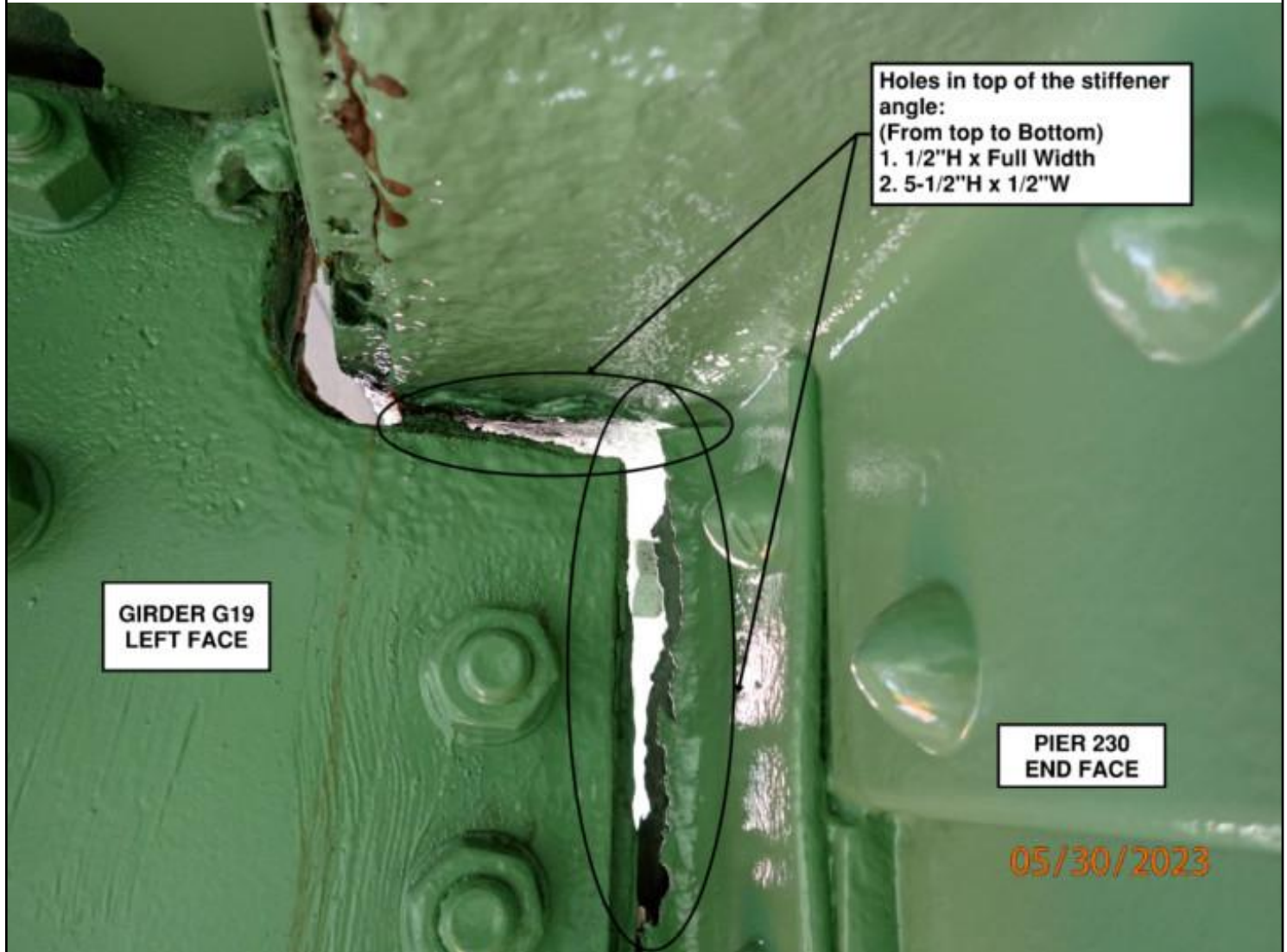
Photo Filename: P5303368.JPG



Attachment Description: Connection angle exhibits large corrosion holes in the top and bottom side of the connecting leg with crack in middle. Looking Left.

Photo Number: 8

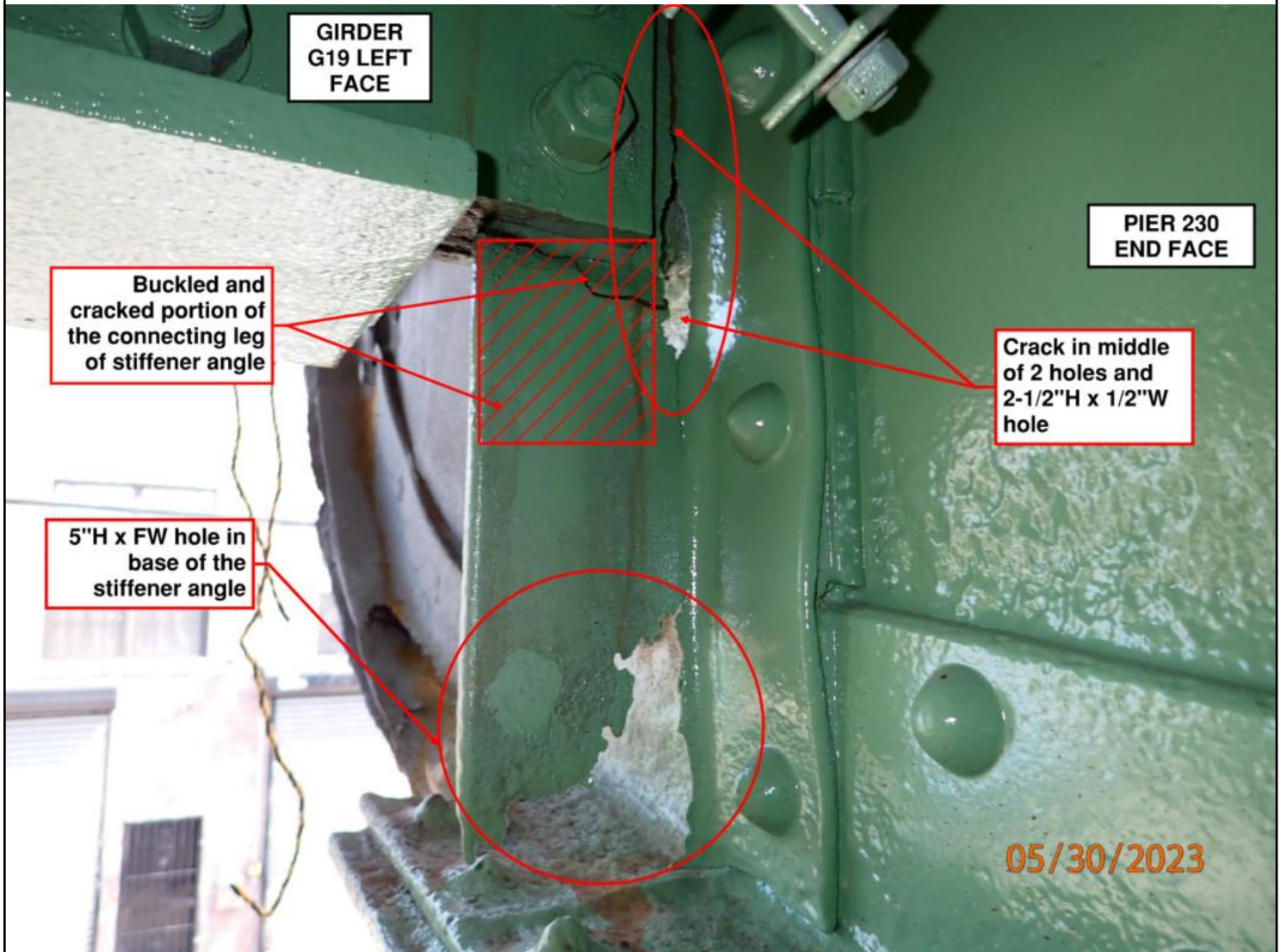
Photo Filename: P5303360.JPG



Attachment Description: Connecting leg of the stiffener angle has a 1/2"H x full width hole in top and a 5-1/2"H x 1/2"W hole adjacent to the top corner of the girder web end. Looking Right.

Photo Number: 9

Photo Filename: P5303357.JPG



Attachment Description: Connecting leg of stiffener angle has a hole to the top corner, and a 2-1/2"H x 1/2"W hole with 2"L fine crack to the bottom corner of the girder web end. The portion between these two holes is completely cracked. Connecting leg of stiffener angle below the girder web is buckled out of plane and has a horizontal crack at the center of the height of buckled portion. Looking Right.

Photo Number: 10

Photo Filename: P5303363.JPG



Attachment Description: : Stiffener angle has a large hole (approx. 5"H x full width) at the base of the connecting leg, above the bottom flange of the pier cap of Pier 230, on the Span 231 side. Looking Right.